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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
			EXAMINER BALDWIN, GORDON	
			ART UNIT 1775	PAPER NUMBER

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/811,891	STAMM, WERNER	
	Examiner	Art Unit	
	Gordon R. Baldwin	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12, 14-19 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12, 14-19 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

In claim 16, in the preamble, the term "essentially consisting of:" is used prior to the ranges of the invention. While the term "consisting essentially" of is understood by MPEP 2111.03, the term "essentially consisting of" is not considered to be properly limiting and is considered to be indefinite and unclear.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 39, 0.05%-0.7% of yttrium, scandium and rare earth metals are claimed and in the same claim, 0.3% by weight of yttrium, scandium and rare earth metals are claimed. It is unclear which range the applicant is attempting to claim.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 16 is rejected under 35 U.S.C. 102(a) as being anticipated by Sommer (Pat. No. 6,280,857 B1).

Consider claim 16, Sommer teaches a protective coating for super-alloy structural parts especially for gas turbine engines (Abstract). The MCrAlY coating is

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shown to be in the gamma phase. (Claim 7) Additionally, Sommer's teaches in column 4 lines 59-68, Chromium from 11-15 wt%, Aluminum from 11.5-14 wt%, Rhenium from 1-8 wt % and Cobalt from 18-28 wt% and Yttrium from 0.3-1.3 wt% and 0-0.5 wt% of a total of Lanthanum or Lanthanum-series.

Additionally, a 'consisting essentially of' claim occupies a middle ground between closed claims that are written in a 'consisting of' format and fully open claims that are drafted in a 'comprising' format." *PPG Industries v. Guardian Industries*, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir.1998). See also *Atlas Powder v. E.I. duPont de Nemours & Co.*, 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); *In re Janakirama-Rao*, 317 F.2d 951, 137 USPQ893 (CCPA 1963); *Water Technologies Corp. vs. Calco, Ltd.*, 850 F.2d 660, 7USPQ2d 1097 (Fed. Cir. 1988). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., *PPG*, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of' for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention."). See also *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1240-41, 68 USPQ2d 1280, 1283-84 (Fed. Cir. 2003)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,11-16,18,19 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (Pat. No. 6,280,857 B1).

Consider claim 6, 14 and 39, Sommer teaches a protective coating for super-alloy structural parts especially for gas turbine engines (Abstract). The MCrAlY coating is shown to be in the gamma phase. (Claim 7) Additionally, Sommer's teaching of ranges for the composition of the coating encompass the amount of cobalt used as well as the use of nickel (Col. 4 Lines 60-67)

Sommer and the claimed invention in claim 6 differ in that Sommer does not teach the exact same proportions of chromium, aluminum or yttrium as recited in the instant claims.

However, the alloy in Sommer and the alloy claimed by the applicant are in such close proportions to those in prior art and since there is no reasoning in the specification that would make a person of ordinary skill in the art conclude that using a slightly lesser amount of chromium, aluminum or yttrium would produce a patentably different product, then the use of a slightly lesser amount of chromium, aluminum and rhenium are considered to be obvious. This is due to the closeness of the percentages of the

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materials and the lack of any showing by the applicant that these percentages would produce a tangibly different product.

Consider claims 11, 12 and 13, Sommer teaches, in column 4 lines 59-68, Chromium from 11-15 wt%, Aluminum from 11.5-14 wt%, Rhenium from 1-8 wt % and Cobalt from 18-28 wt% and Yttrium from 0.3-1.3 wt% and 0-0.5 wt% of a total of Lanthanum or Lanthanum-series.

Consider claim 15, The MCrAlY coating is shown to be in the gamma phase.
(Claim 7)

Consider claim 16, Sommer teaches, in column 4 lines 59-68, Chromium from 11-15 wt%, Aluminum from 11.5-14 wt%, Rhenium from 1-8 wt % and Cobalt from 18-28 wt% and Yttrium from 0.3-1.3 wt% and 0-0.5 wt% of a total of Lanthanum or Lanthanum-series and the claims differ in that Sommer does not teach the exact same proportions as recited in the instant claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Sommer overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the

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motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Consider claims 18 and 19, Sommer does not teach that its protective layer has chromium-rhenium precipitates; therefore Sommer is considered to not possess the chromium-rhenium precipitates.

Claims 7, 8, 9, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (Pat. No.6280857 B1) as applied above, and further in view of Kojima (Pat. No. 5,507,623).

Consider claim 7, while Sommer teaches MCrAlY coating on the proper composition ranges and in the gamma phase (Col. 4 lines 60-67 and Claim 7), Sommer does not teach the use of dual MCrAlY layers in gas turbine components. However, Kojima does teach the use of dual MCrAlY layers in gas turbine components with one layer being laid directly on top of the other. (Col. 4 lines 5-14) It would have been obvious to a person of ordinary skill in the art at the time of invention to have combined the gamma-phase MCrAlY composition of Sommer with the dual layered MCrAlY of Kojima to provide a coating with greater resistance to corrosion and high temperatures. (Kojima Col. 4 lines1-3)

Consider claim 8, Kojima teaches the use of an inner and outer layer MCrAlY layer (Col. 4 lines 5-14) while Sommer teaches an MCrAlY layer in the gamma phase (Claim 7). However the use of re-melting by electron or ion beams is considered to be a product by process limitation and "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious different between the claimed product and the prior art product (*In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Consider claim 9, Kojima teaches the use of an inner and outer layer MCrAlY layer (Col. 4 lines 5-14), while Sommer teaches an MCrAlY layer in the gamma phase (Claim 7). However, the use of "electrodeposition" in applying the outer layer is considered to be a product-by-process and "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product

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was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Consider claim 10, Sommer teaches the use of zirconia in a MCrAlY layer.
(Col. 7 lines 5-10)

Consider claim 17, Sommer teaches, in column 4 lines 59-68, Chromium from 11-15 wt%, Aluminum from 11.5-14 wt%, Rhenium from 1-8 wt % and Yttrium from 0.3-1.3 wt% and 0-0.5 wt% of a total of Lanthanum or Lanthanum-series. While the chromium and the aluminum do not overlap the wt. percentages of claim 17, they are substantially close to that of claim 17 that one of ordinary skill would have expected compositions that are in such close proportions to those in prior art to be prima facie obvious, and to have same properties (*Titanium Metals Corp.*, 227 USPQ 773 (CA FC 1985)).

Additionally, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the percentages of chromium, aluminum and yttrium for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

Applicant's arguments filed 9/21/2006 have been fully considered but they are not persuasive.

Applicant argues that Sommer's ranges are broad, while this is debatable, the ranges that Sommer does claim directly overlap the amount of cobalt and rhenium claimed by the applicant and Sommer is therefore considered to meet the claimed range of the applicant. As for the applicant's claims (6 and 39), which differ slightly in the amount of chromium, aluminum and rhenium that is use, the difference between the claimed subject matter and the prior art reference as not considered to make a patentable difference since no difference in the product is shown in the specification as to why these specific amount would make a patentable difference. Therefore, the small difference in percentages is considered to be obvious to a person skill in the art as an obvious variation in the elements of the alloy composition.

As for the arguments against number 16, since the Sommer's reference has chromium overlap at the 15% mark and the aluminum overlaps at the 11.5% mark, the Sommer reference is still deemed to read upon the claimed ranges. Additionally, since the term "essentially consisting of" was used in claim 16, it is unclear whether it is meant to mean consisting of or comprising. Therefore, comprising was used and the use of other metals by the reference is not considered to negate the Sommer's reference.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB


JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
12/11/04